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\*Admitted only in Maryland  
†Admitted only in Virginia  
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Federal Agencies

November 8, 2004

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Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

**Mail Stop: Amendment**

Re: U.S. Utility Patent Application  
Application No. 09/550,642; Filed: April 14, 2000  
For: **Method and System for Down-Converting an Electromagnetic Signal,  
and Transforms for Same**  
Inventors: Sorrells *et al.*  
Our Ref: 1744.0920001/PEG/TAD

Sir:

Transmitted herewith for appropriate action are the following documents:

1. Fee Transmittal Form (PTO/SB/05);
2. Fourth Supplemental Information Disclosure Statement;
3. Forms PTO-1449 (4 pages) with 1 accompanying document (AP59);
4. Return postcard; and
5. Form PTO-2038 Credit Card Payment Form for \$180.00 to cover Information Disclosure fees under 37 C.F.R. § 1.17.

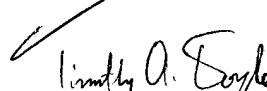
It is respectfully requested that the attached postcard be stamped with the date of filing of these documents, and that it be returned to our courier. In the event that extensions of time are necessary to prevent abandonment of this patent application, then such extensions of time are hereby petitioned.

Commissioner for Patents  
November 8, 2004  
Page 2

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency,  
or credit any overpayment, to our Deposit Account No. 19-0036.

Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

  
Timothy A. Doyle  
Attorney for Applicants  
Registration No. 51,262

TAD/slw  
Enclosures

329650\_1.DOC

**FEET TRANSMITTAL**  
**for FY 2005**

Effective 10/01/2003. Patent fees are subject to annual revision.

 Applicant claims small entity status. See 37 CFR 1.27

TOTAL AMOUNT OF PAYMENT (\$ 180.00)

**Complete if Known**

Application Number	09/550,642
Filing Date	April 14, 2000
First Named Inventor	David F. Sorrells
Examiner Name	Odom, Curtis B.
Art Unit	2634
Attorney Docket No.	1744.0920001/PEG/TAD

**METHOD OF PAYMENT (check all that apply)**

- Check  Credit card  Money Order  Other\*\*  None
- \*\*Charge any deficiencies or credit any overpayments in

 Deposit Account: the fees to Deposit Acct. No. 19-0036.

Deposit Account Number	19-0036
Deposit Account Name	Sterne, Kessler, Goldstein & Fox P.L.L.C.

The Director is authorized to: (check all that apply)

- Charge fee(s) indicated below  Credit any overpayments
- Charge any additional fee(s) or any underpayment of fee(s)
- Charge fee(s) indicated below, except for the filing fee to the above-identified deposit account.

**FEE CALCULATION****1. BASIC FILING FEE**

Large Entity	Small Entity	Fee Code (\$)	Fee Code (\$)	Fee Description	Fee Paid
1001 790	2001 395			Utility filing fee	
1002 350	2002 175			Design filing fee	
1003 550	2003 275			Plant filing fee	
1004 790	2004 395			Reissue filing fee	
1005 160	2005 80			Provisional filing fee	
<b>SUBTOTAL (1)</b>		<b>(\$)</b>		<b>0</b>	

**2. EXTRA CLAIM FEES FOR UTILITY AND REISSUE**

Total Claims	45	45 - **=	0	X	18.00	=	0	Extra Claims	Fee from below	Fee Paid
Independent Claims	4	4 - **=	0	X	88.00	=	0			
Multiple Dependent					300.00	=	0			

Large Entity	Small Entity	Fee Code (\$)	Fee Code (\$)	Fee Description
1202 18	2202 9			Claims in excess of 20
1201 88	2201 44			Independent claims in excess of 3
1203 300	2203 150			Multiple dependent claim, if not paid
1204 86	2204 43			** Reissue independent claims over original patent
1205 18	2205 9			** Reissue claims in excess of 20 and over original patent
<b>SUBTOTAL (2)</b>		<b>(\$)</b>		<b>0</b>

\*or number previously paid, if greater; For Reissues, see above

**3. ADDITIONAL FEES**

Large Entity	Small Entity	Fee Code (\$)	Fee Code (\$)	Fee Description	Fee Paid
1051 130	2051 65			Surcharge - late filing fee or oath	
1052 50	2052 25			Surcharge - late provisional filing fee or cover sheet	
1053 130	1053 130			Non-English specification	
1812 2,520	1812 2,520			For filing a request for ex parte reexamination	
1804 920*	1804 920*			Requesting publication of SIR prior to Examiner action	
1805 1,840*	1805 1,840*			Requesting publication of SIR after Examiner action	
1251 110	2251 55			Extension for reply within first month	
1252 430	2252 215			Extension for reply within second month	
1253 980	2253 490			Extension for reply within third month	
1254 1,530	2254 765			Extension for reply within fourth month	
1255 2,080	2255 1,040			Extension for reply within fifth month	
1401 340	2401 170			Notice of Appeal	
1402 340	2402 170			Filing a brief in support of an appeal	
1403 300	2403 150			Request for oral hearing	
1451 1,510	1451 1,510			Petition to institute a public use proceeding	
1452 110	2452 55			Petition to revive - unavoidable	
1453 1,370	2453 685			Petition to revive - unintentional	
1501 1,370	2501 685			Utility issue fee (or reissue)	
1502 490	2502 245			Design issue fee	
1503 660	2503 330			Plant issue fee	
1460 130	1460 130			Petitions to the Commissioner	
1807 50	1807 50			Processing fee under 37 CFR 1.17(q)	
1806 180	1806 180			Submission of Information Disclosure Stmt	180.00
8021 40	8021 40			Recording each patent assignment per property (times number of properties)	
1809 790	2809 395			Filing a submission after final rejection (37 CFR 1.129(a))	
1810 790	2810 395			For each additional invention to be examined (37 CFR 1.129(b))	
1801 790	2801 395			Request for Continued Examination (RCE)	
1802 900	1802 900			Request for expedited examination of a design application	

Other fee (specify)

\*Reduced by Basic Filing Fee Paid

**SUBTOTAL (3)****(\$)**

180.00

180.00

(Complete if applicable)

SUBMITTED BY	Registration No. (Attorney/Agent)	Telephone
Name (Print/Type) Signature	Timothy A. Doyle / Timothy A. Doyle	51,262 (202) 371-2600 Date 8 NOV 04

WARNING: Information on this form may become public. Credit card information should not be included on this form. Provide credit card information and authorization on PTO-2038.

This collection of information is required by 37 CFR 1.17 and 1.27. The information is required to obtain or retain a benefit by the public which is to file (and by the USPTO to process) an application. Confidentiality is governed by 35 U.S.C. 122 and 37 CFR 1.14. This collection is estimated to take 12 minutes to complete, including gathering, preparing, and submitting the completed application form to the USPTO. Time will vary depending upon the individual case. Any comments on the amount of time you require to complete this form and/or suggestions for reducing this burden, should be sent to the Chief Information Officer, U.S. Patent and Trademark Office, U.S. Department of Commerce, P.O. Box 1450, Alexandria, VA 22313-1450. DO NOT SEND FEES OR COMPLETED FORMS TO THIS ADDRESS. SEND TO: Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

If you need assistance in completing the form, call 1-800-PTO-9199 and select option 2.



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re application of:

SORRELLS *et al.*

Appl. No.: 09/550,642

Filed: April 14, 2000

For: **Method and System for Down-  
Converting an Electromagnetic  
Signal, and Transforms for Same**

Confirmation No.: 9236

Art Unit: 2634

Examiner: Odom, Curtis B.

Atty. Docket: 1744.0920001

**Fourth Supplemental Information Disclosure Statement**

Commissioner for Patents  
PO Box 1450  
Alexandria, VA 22313-1450

Sir:

Listed on accompanying Form PTO-1449 are documents that may be considered material to the examination of this application, in compliance with the duty of disclosure requirements of 37 C.F.R. §§ 1.56, 1.97 and 1.98. The numbering on this Fourth Supplemental Information Disclosure Statement is a continuation of the numbering in Applicants' Third Supplemental Information Disclosure Statement filed on May 11, 2004 in connection with the above-captioned application.

Applicants have listed publication dates on the attached Form PTO-1449 based on information presently available to the undersigned. However, the listed publication dates should not be construed as an admission that the information was actually published on the date indicated.

Applicants reserve the right to establish the patentability of the claimed invention over any of the information provided herewith, and/or to prove that this information may not be prior art, and/or to prove that this information may not be enabling for the teachings purportedly offered.

Applicants provide the following comments regarding the documents:

Documents AP59 and AE63 were cited in an Office Action in related U.S. Patent Application No. 09/567,977, filed May 10, 2000, entitled "Optical Down-converter Using Universal Frequency Translation Technology," directed to related subject matter. Also cited in said Office Action were U.S. Patent No. 6,608,647, Dines, J.A.B., "Smart Pixel Optoelectronic Receiver Based on a Charge Sensitive Amplifier Design," *IEEE Journal of Selected Topics in Quantum Electronics*, IEEE, Vol. 2, No. 1, pp. 117-120 (April 1996); Simoni, A. *et al.*, "A Digital Camera for Machine Vision," *20th International Conference on Industrial Electronics, Control and Instrumentation*, IEEE, pp. 879-883 (September 1994); and Stewart, R.W. and Pfann, E., "Oversampling and sigma-delta strategies for data conversion," *Electronics & Communication Engineering Journal*, IEEE, pp. 37-47 (February 1998), which have already been cited in the present application.

Documents AA61 and AB61 were cited in an Office Action in related U.S. Patent Application No. 10/317,165, filed December 12, 2002, entitled "Method and Apparatus for Reducing DC Offsets in Communication Systems Using Universal Frequency Translation Technology," directed to related subject matter.

Document AC61 was cited in an Office Action in related U.S. Patent Application No. 09/669,634, filed September 26, 2000, entitled "High Frequency Translator and Method of High Frequency Translation," directed to related subject matter. Also cited in said Office Action were U.S. Patent Nos. 5,955,992; 5,999,561; 6,686,879; 6,049,706; 6,421,534; and 6,560,301, and German Patent No. DE 196 48 915 A1 (and its translation), which have already been cited in the present application.

Document AD61 was cited in an Office Action in related U.S. Patent Application No. 09/476,093, filed January 3, 2000, entitled "Communication System Method With Multi-Mode and Multi-Band Functionality and Embodiments Thereof, Such as the Family Radio Service," directed to related subject matter. Also cited in said Office Action were U.S. Patent Nos. 5,937,013 and 5,790,587, which have already been cited in the present application.

Documents AE61 and AF61 were cited in a Notice of Allowance in related U.S. Patent Application No. 09/525,615, filed March 14, 2000, entitled "Method, System, and Apparatus for Balanced Frequency Up-conversion of a Baseband Signal and 4-Phase Receiver and Transceiver Embodiments," directed to related subject matter. Also cited in said Notice of Allowance were U.S. Patent Nos. 6,091,940; 6,370,371; 6,694,128; and 6,704,549, which have already been cited in the present application.

Documents AG61-AI61 were cited in an Written Opinion in related PCT Application No. PCT/US03/16403, filed May 27, 2003, entitled "Method and Apparatus for DC Offset Removal in a Radio Frequency Communication Channel," directed to related subject matter. Also cited in said Written Opinion was U.S. Patent No. 5,483,600, which has already been cited in the present application.

Documents AA62-AF62 were cited in an Office Action in related U.S. Patent Application No. 10/290,323, filed November 8, 2002, entitled "Method and Apparatus for DC Offset Removal in a Radio Frequency Communication Channel," directed to related subject matter. Also cited in said Office Action was U.S. Patent No. 5,483,600, which has already been cited in the present application.

Documents AG62-AI62 were cited in an Office Action in related U.S. Patent Application No. 09/632,857, filed August 4, 2000, entitled "Wireless Local Area Network (WLAN) Technology and Applications Including Techniques of Universal Frequency Translation," directed to related subject matter. Also cited in said Office Action were U.S. Patent Nos. 5,937,013; 6,014,551; 6,073,001; 6,085,073; and 6,314,279, which have already been cited in the present application.

Documents AA63-AD63 were cited in an Office Action in related U.S. Patent Application No. 09/986,764, filed November 9, 2001, entitled "Method and Apparatus for Reducing DC Offsets in a Communication System," directed to related subject matter.

Documents AF63-AI63 were cited in a Notice of Allowance in related U.S. Patent Application No. 09/987,193, filed November 13, 2001, entitled "Method and Apparatus for a Parallel Correlator and Applications Thereof," directed to related subject matter.

Document AA64 was cited in an Office Action in related U.S. Patent Application No. 09/632,857, filed August 4, 2000, entitled " Wireless Local Area Network (WLAN) Technology and Applications Including Techniques of Universal Frequency Translation," directed to related subject matter.

Document AB64 is a co-owned patent which is directed to related subject matter.

This statement should not be construed as a representation that information more material to the examination of the present patent application does not exist. The Examiner is specifically requested not to rely solely on the material submitted herewith.

Applicants have checked the appropriate boxes below.

- 1. Statement under 37 C.F.R. 1.704(d). Each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart application and this communication was not received by any individual designated in 37 C.F.R. § 1.56(c) more than thirty days prior to the filing of this information disclosure statement.
- 2. Filing under 37 C.F.R. § 1.97(b). This Information Disclosure Statement is being filed before the mailing of a first Office Action after the filing of a request for continued examination under 37 C.F.R. § 1.114. No statement or fee is required.
- 3. Filing under 37 C.F.R. § 1.97(c). This Information Disclosure Statement is being filed more than three months after the U.S. filing date AND after the mailing date of the first Office Action on the merits, but before the mailing date of a Final Rejection, or Notice of Allowance, or an action that otherwise closes prosecution in the application.
  - a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
  - b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- c. Attached is our PTO-2038 Credit Card Payment Form in the amount of **\$180.00** in payment of the fee under 37 C.F.R. § 1.17(p).

- 4. Filing under 37 C.F.R. § 1.97(d) This Information Disclosure Statement is being filed more than three months after the U.S. filing date and after the mailing date of a Final Rejection or Notice of Allowance, but before payment of the Issue Fee. Enclosed find our PTO-2038 Credit Card Payment Form in the amount of \$ \_\_\_\_\_ in payment of the fee under 37 C.F.R. § 1.17(p); in addition:
  - a. Statement under 37 C.F.R. § 1.97(e)(1). I hereby state that each item of information contained in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application not more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(1).
  - b. Statement under 37 C.F.R. § 1.97(e)(2). I hereby state that no item of information in this Information Disclosure Statement was cited in a communication from a foreign patent office in a counterpart foreign application and, to my knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. § 1.56(c) more than three months prior to the filing of this Information Disclosure Statement. 37 C.F.R. § 1.97(e)(2).
- 5. The document(s) was/were cited in a search report by a foreign patent office in a counterpart foreign application. Submission of an English language version of the search report that indicates the degree of relevance found by the foreign office is provided in satisfaction of the requirement for a concise explanation of relevance. 1138 OG 37, 38.
- 6. A concise explanation of the relevance of non-English language document(s) appears below:
- 7. A copy of document AP59 is submitted. However, in accordance with 37 C.F.R. § 1.98(a)(2), no copies of U.S. patents and patent application publications cited on the attached Form PTO-1449 are submitted.
- 8. Copies of the documents were cited by or submitted to the Office in an IDS that complies with 37 C.F.R. § 1.98(a)-(c) in Application No. \_\_\_\_\_, filed

\_\_\_\_\_, which is relied upon for an earlier filing date under 35 U.S.C. § 120. Thus, copies of these documents are not attached. 37 C.F.R. § 1.98(d).

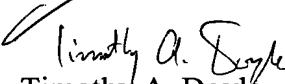
9. It is expected that the examiner will review the prosecution and cited art in the parent application no. 09/521,878, filed March 9, 2000, in accordance with MPEP 2001.06(b), and indicate in the next communication from the office that the art cited in the earlier prosecution histories have been reviewed in connection with the present application.

It is respectfully requested that the Examiner initial and return a copy of the enclosed Form PTO-1449, and indicate in the official file wrapper of this patent application that the documents have been considered.

The U.S. Patent and Trademark Office is hereby authorized to charge any fee deficiency, or credit any overpayment, to our Deposit Account No. 19-0036.

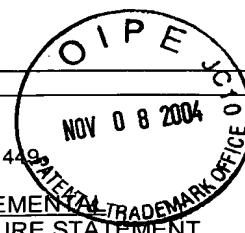
Respectfully submitted,

STERNE, KESSLER, GOLDSTEIN & FOX P.L.L.C.

  
Timothy A. Doyle  
Attorney for Applicants  
Registration No. 51,262

Date: 4 Nov 04

1100 New York Avenue, N.W.  
Washington, D.C. 20005-3934  
(202) 371-2600



FORM PTO-1449 <b>FOURTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT</b>	ATTY. DOCKET NO. 1744.0920001	APPLICATION NO. 09/550,642
	INVENTORS SORRELLS <i>et al.</i>	
	FILING DATE April 14, 2000	ART UNIT 2634
	<b>U.S. PATENT DOCUMENTS</b>	

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA61	5,481,570	01/1996	Winters			
	AB61	5,745,846	04/1998	Myer <i>et al.</i>			
	AC61	5,345,239	09/1994	Madni <i>et al.</i>			
	AD61	4,132,952	01/1979	Hongu <i>et al.</i>			
	AE61	5,260,973	11/1993	Watanabe			
	AF61	6,307,894 B2	10/2001	Eidson <i>et al.</i>			
	AG61	6,091,289	07/2000	Song <i>et al.</i>			
	AH61	6,437,639 B1	08/2002	Nguyen <i>et al.</i>			
	AI61	2002/0037706 A1	03/2002	Ichihara			

**FOREIGN PATENT DOCUMENTS**

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

**OTHER (Including Author, Title, Date, Pertinent Pages, etc.)**

	AN						
	AO						
	AP	59		Deboo, Gordon J., <i>Integrated Circuits and Semiconductor Devices</i> , 2 <sup>nd</sup> Edition, McGraw-Hill, Inc., pp. 41-45 (1977).			
	AQ			—			
	AR						

EXAMINER	DATE CONSIDERED
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



FORM PTO-1449

## FOURTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT

ATTY. DOCKET NO. 1744.0920001	APPLICATION NO. 09/550,642
INVENTORS SORRELLS <i>et al.</i>	
FILING DATE April 14, 2000	ART UNIT 2634

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA62	4,441,080	04/1984	Saari			
	AB62	4,873,492	10/1989	Myer			
	AC62	5,697,074	12/1997	Makikallio <i>et al.</i>			
	AD62	5,784,689	07/1998	Kobayashi			
	AE62	6,335,656 B1	01/2002	Goldfarb <i>et al.</i>			
	AF62	6,690,232 B2	02/2004	Ueno <i>et al.</i>			
	AG62	5,636,140	06/1997	Lee <i>et al.</i>			
	AH62	6,366,622 B1	04/2002	Brown <i>et al.</i>			
	AI62	6,600,795 B1	07/2003	Ohta <i>et al.</i>			

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN		
	AO		
	AP		
	AQ		
	AR		

EXAMINER \_\_\_\_\_ DATE CONSIDERED \_\_\_\_\_

EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



Page 3 of 4

FORM PTO-1449  <b>FOURTH SUPPLEMENTAL INFORMATION DISCLOSURE STATEMENT</b>	ATTY. DOCKET NO. 1744.0920001	APPLICATION NO. 09/550,642
	INVENTORS SORRELLS <i>et al.</i>	
	FILING DATE April 14, 2000	ART UNIT 2634
	<b>U.S. PATENT DOCUMENTS</b>	

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA63	4,250,458	02/1981	Richmond <i>et al.</i>			
	AB63	5,760,629	06/1998	Urabe <i>et al.</i>			
	AC63	6,084,465	07/2000	Dasgupta			
	AD63	6,204,789 B1	03/2001	Nagata			
	AE63	6,064,054	05/2000	Waczynski <i>et al.</i>			
	AF63	5,218,562	06/1993	Basehore <i>et al.</i>			
	AG63	5,239,496	08/1993	Vancraeynest			
	AH63	5,896,304	04/1999	Tiemann <i>et al.</i>			
	AI63	6,005,903	12/1999	Mendelovicz			

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

**OTHER (Including Author, Title, Date, Pertinent Pages, etc.)**

	AN		
	AO		
	AP		
	AQ		
	AR		

EXAMINER	DATE CONSIDERED
----------	-----------------

**EXAMINER:** Initial if reference considered, whether or not citation is in conformance with MPEP 609. Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to Applicant.



FORM PTO-1449

FOURTH SUPPLEMENTAL  
INFORMATION DISCLOSURE STATEMENTATTY. DOCKET NO.  
1744.0920001 APPLICATION NO.  
09/550,642INVENTORS  
SORRELLS et al.FILING DATE  
April 14, 2000 ART UNIT  
2634

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB-CLASS	FILING DATE
	AA64	5,834,979	11/1998	Yatsuka			
	AB64	6,798,351 B1	09/2004	Sorrells et al.			
	AC						
	AD						
	AE						
	AF						
	AG						
	AH						
	AI						

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB-CLASS	TRANSLATION
	AJ						Yes No
	AK						Yes No
	AL						Yes No
	AM						Yes No

## OTHER (Including Author, Title, Date, Pertinent Pages, etc.)

	AN		
	AO		
	AP		
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EXAMINER \_\_\_\_\_ DATE CONSIDERED \_\_\_\_\_

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